

ABSTRACT OF THE DISCLOSURE

A cutter 20 cuts the butted portion between two members 11 and 12 so as to form a groove 13 to the butted portion. 23 is an optical sensor for guiding the cutter 20 to a center of the butted portion of the two members. 21 is a cover that covers the periphery around the cutter. Chips enter the cover 21 and are accumulated therein. 31 is a filling material to be inserted to the groove 13. 33 is a pressure roller preventing the filling material from popping out of the groove 13 during friction stir welding. 41 is a friction stir welding tool for welding the members 11, 12 and the filling material 13. 51 is an air blowout nozzle for blowing air via the proximity of the cutter 20 toward the groove. 52 is another air blowout nozzle disposed at the rear of the cover for blowing air toward the groove 13.